

# Bears Snub Pruned Trees

By DALE NOLTE

**B**lack bears commonly forage on Douglas-fir trees during the spring. The damage inflicted by bears can be extremely detrimental to the health and economic value of a timber stand. Foraging bears are selective in their choice of trees. Several trees within a stand may be stripped while their adjacent neighbors are ignored or minimally sampled. Scientists at the Olympia Field Station of the National Wildlife Research Center related damage to the ratio of concentrations of sugars and terpenes found in the vascular tissue of Douglas-fir. The hypothesis was that pruning reduces carbohydrates preferred by the bears. Subsequently, they related these foraging cues to silvicultural practices to predict where bear damage is most likely to occur.

Fertilization had a positive effect on diameter and on carbohydrates the year after fertilizing, but did not affect terpenes. Carbohydrates were similar in fertilized and unfertilized trees after the first year. The observed increase in tree diameter in the absence of increased vascular tissue mass suggests a growth spurt the same year the treatment was applied. This data supports observations that increased bear damage is likely to occur in fertilized stands shortly after treatment.

The impact of live canopy pruning on the allocation of carbohydrates and terpenes in the vascular tissue was investigated on three Oregon Department of Forestry (ODF) sites. At each of these sites, every other tree was pruned by removing approximately 40 percent of the live canopy. Pruning treatments significantly decreased vascular tissue mass and carbohydrate concentrations while having no impact on the terpene concentrations of vascular tissue. Thus, pruning decreased the carbohydrate to terpene ratio rendering pruned trees to be less preferred to bears than unpruned trees.

Bear preference for unpruned trees

was demonstrated in a survey of bear damage on a 50-acre ODF site that was subjected to the same pruning treatment as described earlier. Statistical analysis revealed that unpruned Douglas-fir are four times more likely to be damaged than pruned Douglas-fir. Similarly, unpruned western hemlock are four

times more likely to be damaged than pruned hemlock. The data was consistent with the hypothesis, demonstrating that bears select for trees to maximize carbohydrate intake and minimize terpene uptake. ■

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